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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Eiji AKIYAMA, et al.

Docket No: Q97096

Appln. No.: 10/594,891

Group Art Unit: 1745

Confirmation No.: 6603

Examiner: Not yet assigned

Filed: September 29, 2006

For: A FUEL CELL

SUBMISSION OF INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

For the Examiner's convenience, enclosed herewith is a copy of the English translation of the International Preliminary Report on Patentability (IPRP). It is assumed that copies of the cited references as required by §371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned will undertake to provide them upon request.

Respectfully submitted,

Howard L. Bernstein
Registration No. 25,665

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: January 12, 2007

PATENT COOPERATION TREATY

PCT/JP2005/006248

From the INTERNATIONAL BUREAU

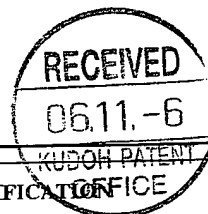
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NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

KUDOH, Minoru
6F, Kadoya Bldg.
Shinagawa-ku, Tokyo 1400013
JAPON

24-10, Minamiooi 6-chome



Date of mailing (day/month/year) 26 October 2006 (26.10.2006)	
Applicant's or agent's file reference 04PCFP1115	IMPORTANT NOTIFICATION
International application No. PCT/JP2005/006248	International filing date (day/month/year) 31 March 2005 (31.03.2005)
Applicant NEC CORPORATION et al	

1. Transmittal of the translation to the applicant.

- ☒ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).
- ☐ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Yoshiko Kuwahara
Facsimile No. +41 22 338 82 70	Facsimile No. +41 22 338 82 70

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 04PCFP1115	FOR FURTHER ACTION		See item 4 below
International application No. PCT/JP2005/006248	International filing date (<i>day/month/year</i>) 31 March 2005 (31.03.2005)	Priority date (<i>day/month/year</i>) 31 March 2004 (31.03.2004)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant NEC CORPORATION			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 19 October 2006 (19.10.2006)
	Authorized officer Yoshiko Kuwahara e-mail: pt07@wipo.int

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

04PCFP1115

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2005/006248

International filing date (day/month/year)

31.03.2005

Priority date (day/month/year)

31.03.2004

International Patent Classification (IPC) or both national classification and IPC

Applicant

NEC CORPORATION

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/IP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006248

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/006248

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1 - 9	YES
	Claims		NO
Inventive step (IS)	Claims	2, 3	YES
	Claims	1, 4 - 9	NO
Industrial applicability (IA)	Claims	1 - 9	YES
	Claims		NO
2. Citations and explanations:			
<p>Document 1: JP 2003-331884 A (Toyota Motor Corp), 21 November 2003</p> <p>Document 2: JP 2001-229942 A (Nissan Motor), 24 August 2001</p> <p>Document 3: JP 48-16222 A (Nobuyuki Sugimura), 01 March 1973</p> <p>Document 4: JP 58-92651 U (Sharp Corp), 23 June 1983</p>			
<p>Regarding Claims 1, 7, and 9</p> <p>The inventions described in claims 1, 7, and 9 do not appear to involve an inventive step over document 1 and document 2 cited in the ISR.</p> <p>The indicated parts of document 1 do not disclose an opening/closing member which changes shape.</p> <p>However, the fuel cell fluid control valve described in document 1 and the fuel cell fluid control valve described in document 2 belong to closely related technical fields, and therefore a person skilled in the art could easily conceive of applying the valve described in document 2 which changes shape using a bimetal for drive power to the valve described in document 1.</p>			
<p>Regarding Claims 4-6</p> <p>The inventions described in claims 4-6 do not appear to involve an inventive step over documents 1-3 cited in the ISR.</p> <p>The indicated parts of document 1 do not disclose an opening/closing member which changes shape.</p> <p>However, the fuel cell fluid control valve described in document 1 and the fuel cell fluid control valve described in document 2 belong to closely related technical fields, and therefore a person skilled in the art could easily conceive of applying the valve described in document 2 which changes shape to the valve described in document 1.</p> <p>Moreover, a person skilled in the art could easily conceive of using the valve described in document 3 which changes shape using an air bag as the valve which changes shape.</p>			
<p>Claim 8</p> <p>The invention described in claim 8 does not appear to involve an inventive step over documents 1, 2, or 4 cited in the ISR.</p> <p>The indicated parts of document 1 do not disclose an opening/closing member which changes shape.</p>			

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006248

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V.2

However, the fuel cell fluid control valve described in document 1 and the fuel cell fluid control valve described in document 2 belong to closely related technical fields, and therefore a person skilled in the art could easily conceive of applying the valve described in document 2 which uses the heat expansion of laminated materials with different heat expansion rates to the valve described in document 1.

Further, a person skilled in the art could easily conceive of selecting the combination of metal and resin described in document 4 as the materials for a valve with differing heat expansion.

Claims 2 and 3

The inventions described in claims 2 and 3 do not appear to involve an inventive step over documents 1-4 cited in the ISR.

Documents 1-4 neither describe an "opening/closing member covering an oxidizing agent electrode by changing shape," nor is this obvious to a person skilled in the art, as it has the particularly remarkable effect of preventing evaporation of fuel while the fuel cell is not in use.